Republic of Korea [2] *Department of Obstetrics and Gynecology, Sanggye Paik Hospital, Inje University School of Medicine, Seoul, Republic of Korea*

Objective: To estimate the total incidence and direct medical expenditure in the treatment of osteoporotic fragility fracture in Korea. Osteoporotic fragility fractures may cause a significant public health problem which could dramatically change the quality of life for patients and their families not only due to a loss of patient independence, significant disability and even death also enormous economic burden. Korea is moving toward an aged society at the fastest pace in the world. As with many other countries, Korea expects to see rapid increase of osteoporotic fragility fracture. However, there are no reports on the economic burden of osteoporotic fragility fracture in Korea.

Methods: Total incidence and direct medical expenditures for the treatment of osteoporotic fragility fracture were estimated using Health Insurance Review and Assessment Service (HIRA) data from 2011 to 2014.

Results: The incidence of fragility fracture is rapidly increasing with increasing ageing population. Annual incidence of osteoporosis related fragility fracture in Korea is about 1039454 cases in 2011, 1090256 cases in 2012, 11159446 cases in 2013 and 1149404 cases in 2014 according to the HIRA data. Total annual medical expenditure only for surgery was 170 million US dollar in 2010, 197 million in 2013 increased almost 15% during the 3 years. Economic burden due to osteoporotic fragility fracture will affect not only nation's economy but also make economic crisis of individual family. That's why secondary prevention of fragility fracture is important both society and nation. Dedicated team approach could provide comprehensive bone health care after fracture – including diagnosis, treatment, education, and research for patients that have incurred a fragility fracture. Systematic approach for prevention of the secondary fracture including assessments, coordinates lab, radiology and pharmacy services could offer specialized treatment. However, all with the goal and focus of promoting bone health, reducing fracture risks, accelerating healing, and preventing re-fractures is not yet established in Korea.

Conclusions: Secondary fracture prevention system is strongly necessary to improve the life quality for elderly person with osteoporosis and to reduce the economic burden of society and nation.

0024

Osteoporosis Medication Persistence and Drug Use Factor in Osteoporotic Compression Vertebral Fracture Patients

Jin-Hyok Kim [1], Dong-Ju Lim [1], Dong-Gune Chang [1], Se-Il Suk [1], Sung-Soo Kim [3], Hoon Choi [2],
[1] *Department of Orthopedic Surgery and Seoul Spine Institute, Sanggye Paik Hospital, Inje University School of Medicine, Seoul, Republic of Korea* [2] *Department of Obstetrics and Gynecology, Sanggye Paik Hospital, Inje University School of Medicine, Seoul, Republic of Korea* [3] *Department of Orthopedic Surgery and Seoul Spine Institute, Haeundae Paik Hospital, Inje University School of Medicine, Busan, Republic of Korea*

Objectives: Proportion of population aged 60 years or over is expected to grow very rapidly in Korea and all over the world. Osteoporosis is one of the major geriatric diseases, however the study of osteoporotic vertebral fracture has been underestimated in osteoporotic fracture treatment. we have investigated persistence of osteoporosis medication and drug use factor in osteoporotic compression vertebral fracture patients.

Methods: Four hundred fifty-eight patients with osteoporotic vertebral fracture who underwent osteoporosis medication in our institution between January 2010 and February 2014, were retrospectively analyzed. Male to female ratio was 403:55. Mean patients age was 75yrs (range: 50–95). The persistence of osteoporotic medication were analyzed using Kaplan Meier survival analysis. Multiple factors analysis was performed using cox regression test. Gender, age, types of drugs, duration, kinds of doctors, change of drug were analyzed.

Results: Persistence of Osteoporotic medication were 52% at 6 month, 40% at 12 months, 28% at 24 months, 25% at 36 months. Women were higher persistence than men ($p < 0.05$). There is no difference between over 75yrs old patients and less ($p > 0.05$). Kinds of drugs and dose interval significantly affect persistence ($p < 0.05$). Persistence ratio was particularly higher in drug change group ($p < 0.0001$). There is no difference between kinds of doctors.

Conclusion: Overtime, persistence of osteoporotic medication in osteoporotic vertebral fracture patients sharply decreased. Changing drug group shows significantly higher sustained rate of the drug medication. Patients also took SERM for a longer period than bisphosphonate. The authors considered that prescribing physician will be able to increase the rate of osteoporosis drugs through the patient care and education. The results of the study are useful in increasing persistence of osteoporotic medicaiotion.

0026

The Relationship between Bone and Muscle and Its Affecting Factors

Sangmo Hong, Woong Hwan Choi, *Department of Endocrinology and Metabolism Hanyang Univ. Guri Hospital, Seoul, Republic of Korea*

Background: Muscle mass was known to related with bone mineral density. However there were few data for affecting factor to this relationship. In this study, we investigated the affecting factor to the relationship between bone and muscle.

Subjects and Methods: The data from a population-based survey, namely, The Korea National Health and Nutrition Examination Survey (KNHANES) IV (08-09) & V(10) (18,007 subjects), were analyzed. We studied the relating factor (anthropometric data and insulin resistance) to bone mineral density (BMD)/[appendicular lean mass(ALM)/(height)2].

Result: With increasing age, BMD/ALM(ht)2 was increasing in men ($B = 0.126$, $p < 0.001$) but deceasing in women ($B = -0.408$, $p < 0.001$). After adjusting age, fat mass (men: $B = -0.186$, $p < 0.001$, women: $B = -0.162$, $p < 0.001$) and waist circumference (men: $B = -0.186$, $p < 0.001$, women: $B = -0.162$, $p < 0.001$), fasting insulin level (men: $B = -0.108$, $p = 0.002$, women: $B = -0.088$, $p = 0.016$) was negatively related with BMD/ALM(ht)2. And insulin resistance (HOMA-IR) was also negatively related with BMD/ALM(ht)2 (men: $B = -0.115$, $p < 0.001$, women: $B = -0.121$, $p < 0.001$). HDL cholesterol level had positive relation with BMD/ALM(ht)2 (men: $B = 0.081$, $p < 0.001$, women: $B = 0.115$, $p < 0.001$).

Conclusion: In this study, bone and muscle relation was differing between men and women. And obesity and insulin resistance may be weakening the relationship between bone and muscle.